Outdoor Education in the Schoolyard

Kathy A. Huncosky

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Introduction

The Madison Metropolitan School District serves over 24,000 students in 48 schools, including 32 elementary schools (grades K-5), eleven middle schools (grades 6-8), four comprehensive high schools, and one alternative high school. The District also has early childhood programs and alternative programs at the secondary level (grades 6-12).

Diversity permeates the District and the city so that students are exposed to a wide variety of cultures. There are 65 world languages spoken by over 4,000 students as their primary language at home. The student population racial ethnic breakout is: 50% White, 24% African-American, 15% Hispanic-American, 10% Asian-American, and 1% Native-American.

The Madison community takes pride in its environmental awareness and stewardship. The District uses energy-efficient technology, and 18 of Madison's schools have been certified as Energy Star Buildings – meaning they are among the top 25% of the state's most energy efficient buildings. Olson Elementary School is one of the first LEED-certified schools in the state. The District has been recognized by the U.S. Environmental Protection Agency, Wisconsin's Focus on Energy, the Governor's office and others for its energy conservation efforts.

The District is nestled among two large lakes and other waterways providing numerous opportunities for students to learn from these living laboratories. The Madison School Forest boasts over 300 acres of natural biological diversity for students to enjoy rustic camping experiences, exploration, and environmental learning through hands-on experiences.

Almost two years ago, I took a position in the Madison School District as a K-5 Science Instructional Resource Teacher. Environmental Education is one of the responsibilities assigned to me in my work in the science division. While the district has science standards, which are on the report card templates used by the teachers in Madison, the district does not have standards for environmental education within the science scope and sequence document. So where is the accountability for providing students in this environmentally conscious school district with environmental learning opportunities? How are teachers providing experiences and meeting the Wisconsin state standards?

Finding answers to these questions, at least at the elementary school level, has become a focus of my work this year. Getting students outdoors and reconnecting with nature has become a priority. Systematizing and organizing a plan to begin to move environmental learning forward for the students in MMSD is essential.

Problem Statement

I was invited by a team of elementary teachers from Olson Elementary School to join them in an Earth Partnership for Schools training in the summer of 2009. Through this experience, I was able to observe the power of collaborative learning as the team developed a plan for prairie restoration. I began to imagine what could happen in other schools across the

city if more teachers were inspired to use the land around them to engage their students in learning.

I had another opportunity in the spring of the 2009-10 school year to continue pursuing this interest and to learn more. I enrolled in an Earth Partnership Action Research course offered through the University of Wisconsin-Madison. From the readings I completed and the discussions between the instructors and participants in this class, questions began to take shape in my mind.

I wondered what kinds of outdoor educational experiences were already being done at the different schools across the district. I knew there were pockets of activity. Where were things happening? Children could have very different experiences depending upon which neighborhood school they attended. Children could have very different experiences depending upon which teacher they had. Who were the passionate teachers? It seemed that outdoor education was at best something provided to students if a teacher had a personal interest in it, and if a schoolyard had natural assets that were of obvious distinction and had pleasing aesthetic qualities. Nothing was organized or systematized around outdoor education in our district. I believed a plan needed to be developed to address this issue.

I decided to begin to take some action to help move outdoor education forward at the district level. It seemed only right to ensure equitable experiences for all children regardless of their school or teacher assignments. A good beginning point, I believed, would be helping teachers and students learn about their own school places. Adults and children alike need to recognize and celebrate the places that are close to them. My research question, although simplistic, seemed important in raising people's awareness and helping them see the amazing resources that were available right in their own backyards, so to speak. My final research question emerged: **What natural assets are available to teachers and students in their own schoolyards?**

Literature Review

In my reading I discovered that using the outdoors for learning is not a new idea. Real learning has the potential to take place right outside the classroom door in schools all across the city of Madison, the country, and the world. Learners can be motivated and inspired by nature. The outdoors can serve as the venue for learning or as the content itself.

A big part of learning outdoors is being comfortable in the setting. Children and teachers need to have direct contact with nature to develop that comfort level. Children can explore, get dirty, find stuff, and have fun outdoors. They can hold nature in their hands and feel its warmth or chill on their skin. They need to directly experience nature to connect with it.

It is not even possible for many of us to imagine childhood without powerful memories of spending time outdoors. We climbed trees, explored our neighborhoods, waded in rivers, and lay on our backs watching the clouds. It was part of our everyday lives.

However, children today may not have these opportunities. Recent research shows that children are spending much less time outside than they did even 20 years ago. Many of today's kids spend hours every day using electronic media. In his 2008 book, Last Child in the Woods, Richard Louv described this trend. He gave the problem the name "nature deficit."

There are many factors that contribute to nature deficit. The fear of strangers keeps kids indoors. Many families worry about bug bites, bee stings, and poison ivy. Sometimes children simply don't have anywhere to play. There are fewer open spaces, especially in urban settings. There are busier roads and kids may not be able to get around safely in outdoor areas. Video games and other electronic devices entice children to stay inside. Sometimes kids have such busy schedules they don't even have time for free play.

Although we are living in an era of media and activity saturation, schools can provide children with some alternative outdoor opportunities. If we weave hands-on outdoor experiences into our curriculum and instruction, students can be engaged and motivated to learn. Real learning can take place outside by providing students with opportunities to experience and interact with nature.

Schoolyard-enhanced learning does not require a large area of land or intricate landscaping. In the Boston Schoolyard Initiative (2001), people were challenged to "imagine a classroom with sky for a ceiling and earth for a floor, a room without walls or desks, where young scientists explore the world of bugs; mathematicians measure rainfall; budding writers record their observations; and actors rehearse on a natural stage." The schoolyard can be an adventure waiting to happen.

Nature is something to which every child can potentially relate. Encounters with nature by hearing something, seeing something, or touching something, can etch memories into hearts and minds. These encounters can happen to children in their schoolyards. We need to take our children outdoors. We can help students discover, observe, and record nature even in our urban schoolyards.

Teachers can introduce children to their schoolyards. Daniel Kriesberg implores teachers in his book, A Sense of Place: Teaching Children About the Environment with Picture Books (1999), to "begin by celebrating the local area. It is close by. It has meaning. The kids already know something about it, and there is much to do and learn nearby." Because of the relative ease of taking students outside in their own schoolyards, developing that sense of place seems to be an excellent match.

Giving children this chance is simple. As a result of my literature review, I came to the conclusion that collecting data on natural assets found in the schoolyards would be an important initial step. What did these places already have available to offer to the students who were learning there? It seemed obvious to me that although every situation was unique, every place would have something available and usable. Some schools might be blessed with large open spaces bordered by trees and fields, while others might feel fortunate just having a few small patches of grass. But every schoolyard would have some natural assets.

I knew I eventually wanted to encourage wider usage of all schoolyards for outdoor education. It was important, therefore, to involve as many people as I felt I could include in this first step. Consequently, I asked grade-level teacher representatives, their students, and a few other staff members back at the buildings to provide insight and input into identifying and describing the natural features in their schoolyards. Additionally, I asked them to provide feedback about their own feelings about spending time and learning outdoors. All of the readings I had been doing supported getting our schoolchildren outdoors on a regular basis and making memories of spending time outside.

The research said schoolyard-enhanced learning was an instructional strategy that could be effectively used to teach concepts and process skills from a variety of content areas. It was an approach that could be used to add variety to teaching and learning and provide needed changes of pace and place. The benefits in learning this way were numerous and appeared to be compatible with many current practices in Madison schools. This was an opportunity to support outdoor education and for which I could be a catalyst. However, I needed to begin building a sense of ownership in the teachers and students.

Data Collection

As part of my data collection, I wanted teachers and students to develop a sense of ownership and pride in their schoolyard sites. I hoped they would be open to discovering resources in their schoolyards they might not have thought of before or found on their own. I wanted them to start developing their "sense of place" in their schoolyards.

One teacher representative from each of the 32 elementary schools in Madison was randomly selected to complete an inventory of his/her schoolyard. This inventory can be found in Appendix A. The inventory was a tool designed to identify and document evidence of the natural features located on schoolyard sites. It was meant to be an exercise to help open eyes to possibilities of what a natural asset means. It was specifically titled an inventory of natural assets to plant the seed idea that there were already existing features on sites which could be used to enhance outdoor learning. Teachers wouldn't have to begin by enhancing their schoolyards. They could use the assets that were already there.

The teachers were encouraged to invite other staff members and/or students to walk with them in the schoolyards while they completed the inventories. Some teachers suggested inviting a naturalist to come along and walk the sites with them in the future. They thought people who are well versed in botany and zoology and who are willing to share their insights and expertise would be a very welcome addition to provide input to this portion of data collection.

The inventory included some directions about the information I was hoping to obtain, some suggestions for possible natural features to look for, and lots of space to provide details about the features that were identified. There was also room to add unique features found in a particular schoolyard and additional information about each site.

I gave a camera to each teacher to use to document the assets they identified on their inventories. By photographing the interesting natural features, they could easily reference them as starting points for outdoor educational opportunities. Small garden plots, unmowed grassy areas, as well as a solitary tree, could all possibly engage the interest of students and teachers. If people looked closely for assets, the more they would likely find.

In addition to these two tools (the inventories and the photographs), focus groups were held with the teacher representatives. They were asked four questions to elicit their feelings and ideas about their schoolyards and about outdoor education in general. Although I revised these questions numerous times, I learned I still could have reworded some of them to make them clearer. However, because I met directly with the teachers, I was able to clarify my intentions and purposes. I felt I could obtain the information I was hoping to glean. In the process, I learned a lot about formulating questions I might ask in the future.

The teachers were asked the following four questions:

1. What natural features are in your schoolyard that you really like?
2. What activities could you do with your students using the natural features in your schoolyard?
3. What would you recommend doing (changes, additions, deletions) to improve your schoolyard?
4. What support and/or resources do you need to increase the use of your schoolyard for outdoor education?

The teachers in turn were provided with four questions to ask their students. They were to hold their own focus groups to collect students' ideas and gather feedback on four very similar questions. Again, some of the questions could have been improved with additional revisions, but I was able to gather the feedback I desired. I didn't receive student interview data from every teacher representative, but the data I did get back included responses from every grade level, and that was important to me. I wanted to hear the voices of students from kindergarten through grade five from across our large urban district. The questions the students were asked to answer were:

1. What do you like about being outside at school?
2. What don't you like about being outside at school?
3. What do you really like about your schoolyard (not including play equipment)?
4. If you could change your schoolyard to make it even better, what would you do (not including play equipment)?

I felt all of the tools I used for my data collection were appropriate for my project. Although I might have worded some of the questions differently if I did it again, the inventories, the photographs, and the focus groups provided me with the data I felt I needed to collect.

Data Analysis and Findings

As a result of my action research project, I hoped to have an inventory and photographs from all 32 elementary schools in the district. However, two of the schools never had a teacher representative identified to complete the site inventory. (Kennedy and Nuestro Mundo) Also, as the due date for completing the inventory approached, two other teachers (from Thoreau and Van Hise) said they wouldn't be able to collect data due to busy schedules and limited time.

I decided to do an inventory at these four sites myself. By scouting around these schoolyards, I could identify the natural features, and photograph what I found. Unfortunately, because I didn't have any particular connections with the sites, I wasn't sure I captured all of the "hidden treasures" that would have been identified by people who were more directly tied to the sites.

When it was time to begin analyzing the data, there were still eight inventories that had not been returned. I had information about natural assets from 24 of the 32 elementary schools in the district, a 75% return rate. In time, I will probably receive most or all of the inventories, and I will continue to add the data from them to the spreadsheet (Appendix B). This information will be used for other projects that may be planned and carried out in the future.

In looking at the data entered on the spreadsheet, there were many similarities in natural features across the schoolyards. As I pondered the possible results of the data I would collect

from these inventories before I sent them out, I correctly predicted the natural features that were most frequently identified: trees, shrubs/bushes, flowers, and grassy fields. Almost all schoolyards had all four of the features.

I was surprised to discover that fifteen of the elementary schools had vegetable gardens. I didn't expect so many sites to have this potentially labor-intensive asset. Gardens can be difficult to maintain in the summertime, so I anticipated there would only be a small number of schools that had them. I was also a bit surprised to find seven schoolyards with prairie areas. Many of these schools had participated in prairie restoration projects in conjunction with the Earth Partnership for Schools program in the past.

There were a few other interesting discoveries I made from this data analysis. Seven sites indicated they had a hill as a notable land feature. The children at those sites especially enjoy the sledding opportunities in the wintertime. Fifteen of the schools indicated they already have some outdoor seating available, and many more schools indicated a desire for additional spaces for seating. A graph of some of the assets most commonly found in the schoolyards is located in Appendix C.

The spreadsheet, referenced earlier, contains the information about the features identified in each of the schoolyards. My intention is to use this information to help connect schools with similar features so they can collaborate in their planning endeavors. Perhaps some of the sites will serve as models for others as teachers explore similar visions of schoolyard restoration and/or implementation of outdoor education. I will be able to tailor professional development to meet schools' specific needs, which can be focused around the natural features that have been identified at those sites. As teachers explore enhancing their schoolyards, they will have examples from other sites that have made those improvements.

The photographs, taken by both students and teachers, serve as evidence of and support for the natural assets that were identified. They captured the features that can now be shared with others. As the saying goes, "A picture's worth a thousand words." The pictures speak for themselves.

The remainder of my data was collected through focus groups. Each participant, student or teacher, answered a total of four questions. This format was very effective partly, because it provided opportunities for discourse and because it was easy to document responses as people shared their thoughts. The participants were able to feed off of comments made by others, and all of us were able to engage in rich conversation. I was able to gather their input on the spot and didn't have to hope to get the data at a later time.

Organizing the data I received from all of the focus groups was a very helpful process for me to complete. As I was doing this somewhat cumbersome and mundane task, I began to see ideas that were repeated. When I had finished typing all of the data, I was able to identify themes which had emerged for each set of answers. I went back through all of the data a second time and color coded the information by the themes I had identified. This became a visual tool so I could truly "see" the big ideas. It had allowed me to efficiently analyze a fairly large amount of data.

Following is a summary of the results of the responses to the questions posed in the focus groups. I'll point out the themes that emerged from the teacher participants first, and then I'll do the same for the student responses. A copy of the complete lists of responses for the four

questions asked of the teachers can be found in Appendix D. The students' complete list of responses to the four questions is found in Appendix E.

When teachers were asked about which natural features they really liked in their schoolyards in question one, they overwhelmingly listed "green" areas. These areas included open fields, prairies, trees, bushes, hills, flowers, and gardens. Basically, if it was alive and green, the teachers considered it a natural asset.

In response to question two, the teachers reported many diverse activities they engaged in with their students in their schoolyards. I sorted these responses into content areas. Teachers used their schoolyards to conduct science and environmental activities most frequently. They also made connections to writing, art, math, and social studies, although to a much smaller extent. Some teachers used their schoolyards to involve their students in service learning projects. Other miscellaneous activities included were making natural art, orienteering, creating "I wonder" questions, and studying seasonal changes.

In response to question three, teachers shared suggestions for improving their schoolyards. The primary recommendations, each made by numerous teachers, included growing more plants, adding more seating, and improving the upkeep of their sites in that order. Their ideas focused on making the schoolyards more aesthetically pleasing and more convenient to use for educational purposes.

Four themes emerged from question four about the resources and support teachers needed to increase their use of the schoolyards for student learning. The response that people are needed to help move things forward was given most often. The teachers suggested these people can be experts in the field, volunteers, retired citizens, or parents. I was not surprised to see funding second most often on this list. It usually takes money to make improvements. Many teachers also hope for more professional development opportunities around outdoor education. The staff does not want to have to create lesson plans in isolation. They want the lessons to be tied to existing curriculum, like the Full Option Science Systems (FOSS). The last need focused on making new plans for outdoor spaces and/or remodeling the existing spaces located on schoolyards. Many teachers indicated a need for additional seating.

Most of the teacher leaders did conduct focus groups with their students back in their individual classrooms. Again, I searched for themes and patterns to emerge as I analyzed the data, and they did! The voices of the children could clearly be heard. They provided lots of helpful feedback from the perspectives of elementary-school-aged children.

When the students were asked what they liked about being outside at school in question one, five ideas were clearly evident. The top answer to this question was the ability and freedom to be active in the schoolyard. This was followed by spending time with their friends, the living things – both plants and animals in nature, the large open spaces (the expansive grassy areas) and the accompanying feeling of freedom, and the good feelings they generally had when they were able to spend time outdoors. One student remarked, "When I walk around, I like to feel the cool air because inside the air is not cool." Another responded, "Being outside gives you a chance to connect with nature – to learn more about it because you are in it." And this statement sums up why being outside is so great . . . "I like being outside because in general everything is better!" Being outside gave them an opportunity to explore, run, and observe cool things, as well as play, play, play!

The second question focused on the reasons that kids don't like spending time outside. I grouped the barriers to their enjoyment into four main issues. Kids were worried about their safety. Some of them reported they had tripped on sticks, fallen down and gotten hurt, gotten pricked by thistles and thorny plants, and gotten sunburned. They worried about the rocks that were present in their schoolyards and commented on how they got in their way. They also had bad experiences with weather extremes – too hot, too cold, too rainy, and too snowy. One student said, "I don't like being outside when the weather is yucky – the lion days." Many students didn't like the mud and getting dirty as a result of being outdoors in general. They really didn't like the results of wet conditions – mud! The last big theme that came up frequently was the problem with bugs and insects. Kids don't like being bothered, bitten, or "dumped on" by bugs! They also don't enjoy "spider webs getting in their mouths!"

When students were asked in question three to respond to what they really liked in their schoolyards, it was almost a repeat of the responses given to question one. They commented again on their ability to be active, the open spaces, the plants and animals they could see, and the good feelings they had when they were outside. I originally thought question one would have tapped more into what students could "do" outside, and question three would have prompted them to generate a list of "things" that were found in nature. But both questions were answered in pretty much the same ways. After reading through the responses to question one, I didn't feel I learned much if any new information from the responses given to question three. This question could have been omitted.

After seeing how many students liked how big their grounds were, I was surprised how many students wanted even bigger schoolyards. In their responses to question four about changes they wanted to make to improve their schoolyards, words like "bigger," "higher," "more," "add," and "expand" were repeated often. Many wanted more trees and more flowers. Quite a few students suggested adding more seating in the way of benches and tables. A fun new feature many wanted to add was water. There were ideas of having a snow machine, an ice-skating rink, a pond, a lake, a water fountain, a bird bath, and waterfalls!

As I mentioned earlier in the paper, it was important for me to get feedback from both teachers and students. The participants in the two groups don't necessarily value the same things. I felt the focus groups offered an opportunity for both groups' voices to be heard. That being said, everyone, both students and teachers, recognized and identified the assets in their schoolyards and could readily suggest ways to make their schoolyards even better.

Action Plan

Where do I go from here? In many ways, after analyzing the results of this action research question, I realized I had completed a needs assessment and obtained some initial documentation of essential information that can be used to help inform decision making and planning in the future. It was a much needed first step for me to take in my position as a science instructional resource teacher if I hope to move outdoor education forward in the district. I am definitely more literate on the subject, but I need to continue my literature review. The more I familiarize myself with the topic of outdoor education, the more I realize needs to be done. I now have ideas of how some of the stakeholders feel, and some thoughts of how we could begin to proceed.

In the process of completing my action research paper and beginning to wrap up my project, I realized I have reached only the tip of an enormous iceberg. I have started to get the word out that at a district level we want to focus more attention on outdoor education. A small group of students and teachers have taken a glimpse into their schoolyards and had a chance to express some of their feelings about outdoor education. Now the work really begins!

There will be many steps to take as we move forward in our endeavors and there are many different directions we could follow. We will need to take one small step at a time. Creating a vision for a big overall picture seems to be the next logical step to take. The results of the needs assessment are in, and a definite need has been established. Hopefully some of the teacher leaders who began this work will have interest and determination to continue their involvement in creating an outdoor education vision statement for the district. We need to have the overarching goals in mind when the details are addressed at a later time. Elementary teachers have had an opportunity to give their input, and I will need to invite middle- and high school teachers to join the conversations. There will be other community partners who will need to be identified, and parents, as well. All groups need to have the chance to be a part of the conversations. The science division will want to carefully consider who needs to be at the table to determine the focus and direction of our district's commitment to environmental education.

Once a vision statement has been created and there are more people at the table, we will need to consider an outdoor educational plan for the students in our district. As we help children discover nature in their schoolyards, we will also help them develop their sense of place. Changes at the school level will require the support of the principals and at least a number of faculty members at each site. Schoolyard-enhancement efforts are much more doable and have much more sustainability if more than just one interested staff member is involved. A sense of ownership has to be built into the school communities if their projects are going to be ongoing.

One of the first steps at the schoolyards will be getting kids outdoors to experience nature and begin to feel comfortable. My role will be helping teachers develop their own comfort with some very basic tools for getting kids outdoors and connecting with their schoolyards. Learning together and rediscovering a sense of wonder are important aspects of this work. There is plenty to see and do in any outdoor setting. In order to care about the natural world, kids have to learn that it is everywhere. Simply taking walks outdoors would be one great way to introduce children to their places of learning.

Implementing planned nature walks to teach simple concepts is great, but having a free time for exploration is also appropriate. Students could join in activities like creating nature art, keeping journals, writing simple books, following maps, going on scavenger hunts, finding patterns, observing plants and/or animals, studying biodiversity, taking pictures, drawing diagrams, etc. I could go on and on! All of these opportunities allow students to learn about nature in their own schoolyards and are general enough to be implemented and effective in any of the schoolyards to enhance outdoor learning. This is something I could facilitate happening. I could provide ideas and could also act as a clearinghouse for others' ideas.

In my position as a science instructional resource teacher, I plan on helping teachers extend their science classroom learning into the field to bring the science concepts and principles to life. In the process of validating classroom learning among the schoolyard trees and shrubs, flowers and vegetables, and in the sky overhead, students will be invited to develop a relationship with nature. I can help elementary and middle school teachers take their FOSS

curriculum outdoors. This science outdoor education will continue and extend the learning that has started in the classroom, providing more experiences with the content and additional opportunities to practice skills and techniques developed in the classroom. It will also provide opportunities for students to discover applications and examples of classroom content and knowledge. Students will need to take their knowledge from the classroom setting and see how it applies and generalizes in the broader context of the world. This has the potential to enrich their learning. Another goal, of course, would be simply to connect students with nature. When students have this chance to bond with nature, they have an opportunity to accept a precious gift, and we will have accomplished something great!

Another action step would be to help teachers enhance the schoolyards themselves. There are many ideas and resources for transforming schoolyards into exciting and functional learning environments. Of course, every situation will be different and unique. The schoolyards need to be able to be used easily and frequently. They need to be functional, interesting, and comfortable places for the students and teachers. There will need to be steps outlined to help schools move forward as they plan teaching and meeting areas in their schoolyards. Most of the elementary schools have completed site inventories, so they are familiar with the resources they already have available to use. Ideally, the teachers can continue to build from their identified assets as they explore beginning or extending their present outdoor educational offerings.

Teachers have already identified the need for professional development opportunities. They have already identified some very realistic concerns and questions as they consider using the outdoors as a tool. They want to learn more about how they can provide safe outdoor experiences, what they first need to do indoors to help ensure a good experience outdoors, how to teach effectively and efficiently outdoors, and then how to build on outdoor experiences when they are back in the classroom. They will need the support of their administrators, colleagues, and parents to move forward with schoolyard-enhanced learning. They will need to have support linking their outdoor learning experiences with content and process standards. They will need support and resources to make outdoor learning happen. I hope to address their needs and help make it possible for them to offer outdoor experiences for their students.

In summary, my next action steps include:

1. Assembling a group to create a vision statement for outdoor education in the Madison Metropolitan School District.
2. Designing an outdoor educational plan to help students develop a “sense of place” and comfort in their schoolyards. This will include developing some general outdoor learning activities able to be used in any of the schoolyards in the district.
3. Making and sharing some connections to the existing FOSS science curriculum.
4. Assisting teachers as they enhance their schoolyards to provide opportunities for their students.
5. Offering professional development for teachers as we address these action steps.

These are some steps I can help the district take. With the assistance of other district staff members and established community partnerships, hopefully the benefits of outdoor learning will be equitable, systematic, and sustainable across the district. Eventually this endeavor will involve students completing service learning projects, and perhaps moving beyond their schoolyards out into their neighborhoods and their community. The schoolyard and beyond can

be an option for every subject area and every grade level in our district as outdoor education becomes a norm in the Madison School District

Final Reflection

As a result of my action research project, I am convinced that effective environmental education can focus on local, small-scale levels and affect positive changes in children. Students can begin to look at what is happening in their own schoolyards. Time outdoors during the school day is beneficial for student learning, and can encourage students to become enthusiastic and self-motivated learners. Research has produced evidence that using schoolyards can be an effective way to enhance student learning. Student attitudes are influenced by simple outdoor experiences. Incorporating the outdoors into the traditional school learning environment offers opportunities for students to synthesize concepts and personal experiences by applying what they have learned to a new environment.

The Madison Metropolitan School District's 24,000 students in 48 different school buildings are ripe and ready to move outdoors. Schools may be the only place where these children are encouraged to interact with nature. Kids can easily head out their school doors to find nature in their schoolyards and their neighborhood parks. Students deserve to have opportunities to go outdoors so they can see nature, experience it, and embrace it!

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Appendix A

Inventory of Natural Assets in Your Schoolyard –
Evaluating What You Have
(March 2010)

School Name _____

Contact Person _____

An important step in getting children outdoors is developing a basic inventory of existing natural assets on the school grounds. This exercise will help to get a sense of the space and natural features in your schoolyard. Take this sheet outside and spend some time collecting information. If you like, you can enlist the help of other staff members or students. Don't be limited by what is on this paper. Place a check next to each area that is present on your school property, and provide a description of it. General information might include: the size of the area, foot paths and/or outdoor seating in the area, the name given to the area if it has one, etc. Specific information might include some of the ideas listed in the parentheses by each area on the sheet. Please begin your inventory by photographing the front of your school building, and document each area you identify with a photograph as well. Thank you for your time and effort in completing this important step in getting students outdoors.

_____ Wooded Area (one tree, a few trees, nut trees, shrubby woods, pine forest, deciduous forest, mixed forest, stumps, fallen logs, etc.)

Description:

____ Garden Area (flowering plants, vegetables, orchard fruits, berry bushes, herbs, butterfly garden, rain garden, etc.)

Description:

_____ Prairie Area (native wildflower meadow, grassland that is not mowed)

Description:

_____ Grassy Area (sports fields, mowed grass, park-like setting, etc.)

Description:

_____ Notable Land Area (rock outcrops, boulders, rock pile, hills, etc.)

Description:

____ Water Area (stream, pond, lake, marsh, ditches that collect water, etc.)

Description:

____ Other Area

Description:

_____ Other Area

Description:

Additional Information about Natural Assets in Your Schoolyard:

Natural Areas Adjacent to or Walking Distance from Your Schoolyard:

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

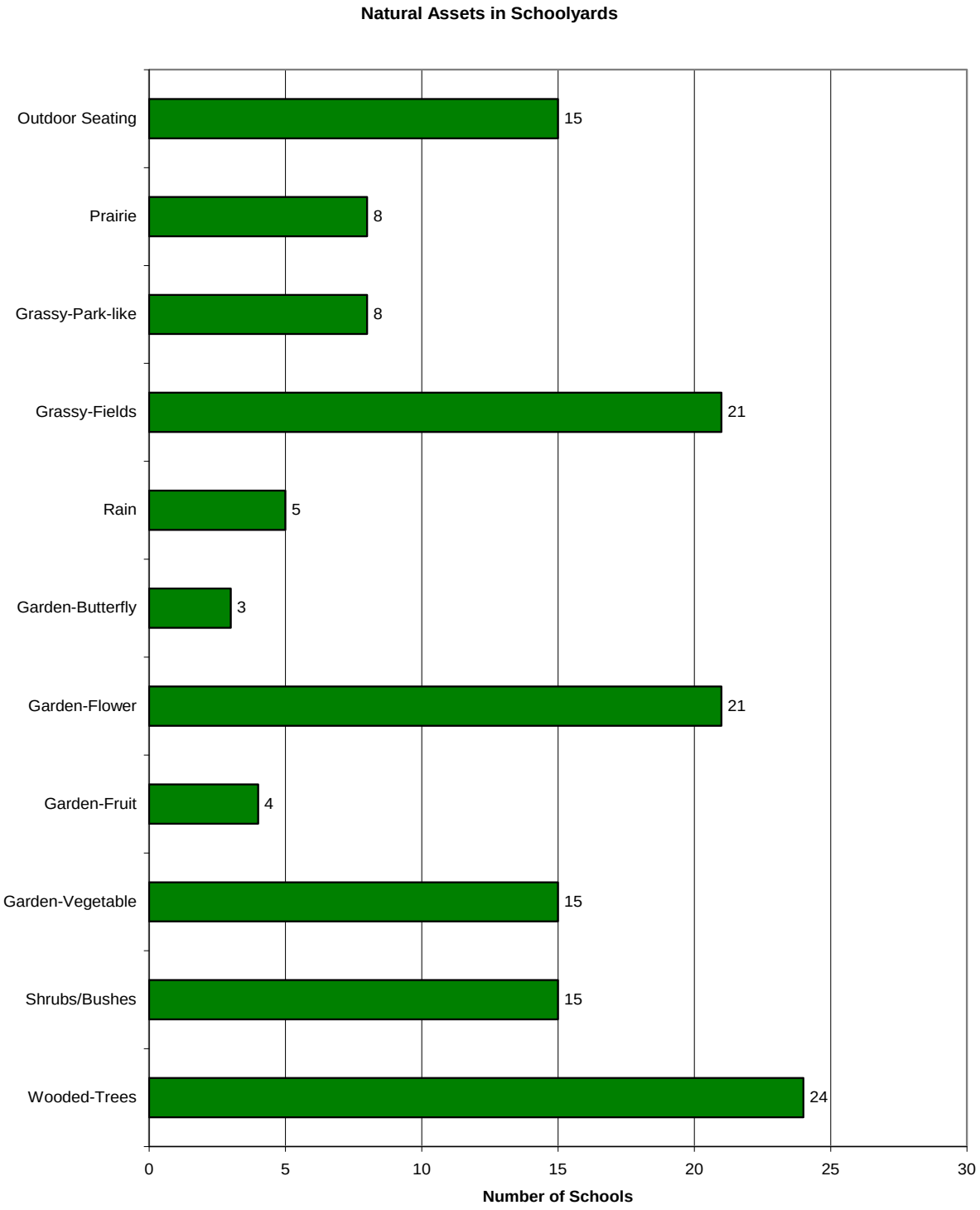
9. _____

10. _____

Appendix B

Natural Assets in Schoolyards														
	Wooded Trees	Shrubs Bushes	Garden Vegetable	Garden Fruit	Garden-Flower	Garden-Butterfly	Rain Garden	Grassy-Fields	Grassy-Park-like	Prairie	Notable Land	Water	Outdoor Seating	Other
Allis	X	X	X		X			X	X	X			X	
Chavez	X				X		X	X						
Crestwood	X	X	X	X	X	X		X		X			X	
Elvehjem	**No response**													
Emerson	X	X			X			X	X				X	**6**
Falk	**No response**													
Franklin	**No response**													
Glendale	**No response**													
Gompers	**No response**													
Hawthorne	X	X	X		X			X			**Hill**		X	**Gazebo**
Huegel	X	X			X			X		X			X	
Kennedy	X	X	X		X			X	X	X			X	**Ropes**
Lake View	X		X		X			X			**Hill**	**Stream**		**Cornfield**
Lapham	X		X	X	X			X						
Leopold	X	X	X		X			X	X	X			X	
Lincoln	X		X		X	X		X						
Lindbergh	X		X					X			**Hill**	**Marsh**	X	
Lowell	**No response**													
Marquette	**No response**													
Mendota	X		X		X			X			**Hills**			
Midvale	X		X	X	X		X	X						
Muir	X	X			X			X	X				X	
Nuestro Mundo	X	X	X		X			X	X	X			X	
Olson	X	X			X		X	X		X				
Orchard Ridge	X	X			X			X			**Rocks**	**Pond**		**Footpath**
Randall	X	X		X	X				X		**Hills**		X	**Bird Bath**
Sandburg	X				X	X		X		X				
Schenk	**No response**													
Shorewood	X		X				X				**Hill**		X	**Theater**
Stephens	X	X					X	X					X	
Thoreau	X	X	X		X				X		**Rocks**	**Pool**	X	
Van Hise	X	X	X		X			X			**Hill**		X	

Appendix C


Natural Assets in Schoolyards
Outdoor Seating
15
Prairie
8
Grassy-Park-like
8
Grassy-Fields
21
Rain
5
Garden-Butterfly
3
Garden-Flower
21
Garden-Fruit
4
Garden-Vegetable
15
Shrubs/Bushes
15
Wooded-Trees
24
0
5
10
15
20
25
30
Number of Schools

Appendix D

Interview Questions/Focus Groups
Teacher Responses

What natural features are in your schoolyard that you really like?

- Various wildlife
- Green space
- Woods
- Courtyard with trees
- Rain garden
- Plants
- Flowers
- 50-year-old trees
- Sports field
- Community gardens
- Prairie
- Maple tree
- Mud
- Tall trees
- Scrub bushes
- Fruit trees
- Kettle pond
- Corn field
- Large open grassy field
- Prairie
- Woods
- Retention pond
- Gardens
- Flowers
- Vegetable garden
- Big hill
- Native trees
- Ditch
- Stone courtyard
- I really like our hill.
- Big trees
- Garden
- Lots of room for running/team sports on grassy field
- Mature trees and landscaping
- Spring bulbs outside of classrooms
- Outdoor classroom
- Garden
- Prairie
- Outdoor classroom
- City wooded area and prairie
- Few gardens we have (in barrels, at entrances, and along building)
- Courtyard with grass and trees
- Benches and tables in courtyard for outdoor learning
- Coniferous and deciduous trees for comparing during seasons
- Plenty of open green space
- Little tree by tire swings
- Flowers
- Big grassy fields (some would like more variety, activities limit space for team games)
- Some shady spots
- The expanse of the play area.

What activities could you do with your students using the natural features in your schoolyard?

- Poetry writing
- Pulling invasive plants
- Walks with observations (clouds)
- Arthropod hunt (catch and release)
- Lawn grooming, picking up trash, picking up twigs

- Natural artwork
- Seed study
- Wetland restoration
- Insects in the garden activities
- Biodiversity studies
- Plant trees
- Filtered water
- Build landforms
- Composting
- Journey North project
- Tulip project
- Plots attached to a grade level, K-5, GPS's
- Map the schoolyard
- Arthropod hunt (catch and release)
- Orienteering
- Observations
- Shared drawings
- Spark ideas related to "Lucy Calkins" writing
- Photography - observations over time, make art, puzzles
- Prairie – observe over time
- Designate a tree for each class (journal, tree hunt)
- Observe insects
- "I wonder" questions used as inquiry
- Sweeping prairie and observe what is caught – random sampling
- Seed sorts
- Biodiversity studies
- Data collections – biological illustrations
- Observations – weather, seasons, insects, solids/liquids, etc.
- Leaf collections
- Earth Day clean ups
- Rain garden
- Prairie or woodland study, biodiversity
- Gardening
- Observation of seasons
- Graphing things present
- Making seasonal observations
- Looking for insects
- Outdoor classes and experiments
- Chalk paintings out front on sidewalk
- Could do some independent reading outside
- Study trees
- Seasonal changes
- Gardens
- Insects
- Take my kids up to the field to clear litter
- To write stories about the woods
- To make predictions about the plants during the season
- Play kickball in the field
- Outside classes
- Independent reading
- Take the students out and observe far more – drawings, photos, noting changes, seeing details

What would you recommend doing to improve your schoolyard so it can be better utilized by staff and students?

- Outdoor seating
- Planting and identification of plants
- Improve maintenance
- Living wall to courtyard
- Prairie restoration
- PD around ideas to utilize space better
- Community connections and spots
- Start/adopt garden (spring, summer, fall)
- Improve accessibility
- More grass
- Develop gardens
- Prairie restoration

- Get the district to remove the "No students on the water" policy
- Find another source of playground bases (not rubber tires)
- Improve maintenance of garden
- Outdoor seating
- We could plant a prairie on our large field since it is barely used.
- We could also improve our gardens.
- Funding for the garden
- Outdoor seating big enough to accommodate a class
- More small-group seating, grouped benches, picnic tables
- An area of trees/shrubs in back
- Some marked designations for field play
- Put in natural grasses and flowers to create a butterfly garden
- Reduce the size of one of the soccer fields and put in a prairie.
- More seating available for parents that utilize our playground
- Flower beds in front of each classroom for those individual classrooms to take care of
- Birdhouses and feeders put up in the trees to attract more birds
- More green, flat space
- Less blacktop
- Revitalize the prairie
- More activities related to our wooded area
- Develop more gardens
- I'd like better integration of the sections. Our prairie is wonderful, but it's far away in a back corner. Our gardens are on the edges of where students are allowed to roam. They all get forgotten.
- Try to make the inner courtyard into something we could use for study – like possibly putting in a pond
- Figure out a way to use the courtyard (talking) without disturbing other classrooms
- More seating, and more seating in the sun
- Better benches
- More small-group seating areas
- Class-size seating area
- No bench behind the soccer net!
- 4/5 garden on our side
- Clump of trees/shrubs between play structures
- Remodel – put play structures together

What support/resources do you need to increase the use of your schoolyard for outdoor education?

- PD opportunities
- Funds
- Literature – good books to read about the topic
- Parent volunteers
- Time
- Community experts
- Retired citizens
- Naturalists to provide tours of schoolyards for teacher education and to identify flora and fauna
- Community natural resources
- Exploring hidden treasures
- Support/education of principals
- Increase status of science at elementary levels
- Grant writing support
- Tools
- Summer support of gardens
- Money
- MSCR support at all schools
- Outdoor seating

- Having “guides” or “naturalists” who could come to the school and talk to the kids about flowers/trees/etc. around the school
- More connection ideas for lessons that connect with FOSS and the natural surroundings
- Teacher friendly lesson plans for our outdoor area along with PD so staff has something to use without having to write our own since at elementary we have to plan for so many subject areas. This is one of the things that is nice about the FOSS lessons.
- Funds to create and maintain outdoor areas
- More places to sit
- For the butterfly garden I will need help to do the physical labor of getting the soil worked up. I need plants and mulch that will hopefully be donated by parents and staff. I will also need help with making sure that this is watered during the summer until it is established.
- For the classroom flower gardens, it would be helpful if we had some landscaping timbers or something to plant in so the flowers are not mowed over. We would also need top soil and bulbs.
- I would love to see bird feeders in the mature trees outside of our classrooms. So we would need to get feeders, houses, birdbaths, and birdseed.
- Comprehensive plan for school grounds
- Expert at planning and informing
- Funds and/or donations from landscaping firms, horticulturalists, etc.
- Funding for the garden
- We need people willing to tend garden.
- For a prairie, we need, most likely, the city to help plant it.
- More soccer balls
- White boards
- Painted lines for field designation
- Covered imaginary play area
- Money to repair/paint benches
- Plans for outdoor seating
- Shade grass for muddy areas in front
- Grass or chips to cover mud around benches
- Clear out dead leaves in front – get shade plants
- Remodel layout
- Thought-out plan for layout
- Lessons. FOSS style that integrate. They could be short, maybe just a recurring 50 minute lesson on what we have with observations at four points in the school year.
- Lesson samples

Appendix E

Interview Questions/Focus Groups
Student Responses

What do you like about being outside?

- When I walk around and feel the cool air because inside the air is not cool
- Seeing all kinds of bugs and stuff
- Going in the woods and finding litter and picking it up
- Exploring the trees
- Maple tapping
- I usually relax and learn more.
- Running around in the grass
- Playing in the grass
- Nature walks
- Listening to birds sing
- Fun to play
- Beautiful
- Sunny, trees, grass
- Watching ants
- Being with friends, making new friends
- Lots of space to run
- Wind – seeing trees swaying
- Playing soccer/sports
- Tag
- Freshness
- The fresh air
- Flying kites
- The sounds of birds
- Looking for animals, deer, butterflies
- Nature's beauty
- Observing bugs
- The warm sun
- Picking up leaves and throwing them in the air
- The trees, flowers, and grass
- There is so much to explore.
- Plants and flowers
- Don't have to sit in desks
- Like to run around
- Enjoy warm weather
- Get to touch things
- Lots of space
- Playing sports with my friends
- Playing with friends on the equipment
- Playing tag outside
- Playing with my friends
- Swinging on the tire swing
- The fresh air
- Playing on the slide
- Playing on the playground
- Feeling the weather
- Playing football
- Playing tag
- Makes me feel good and happy
- Playing with friends
- Running
- Playing tetherball
- Playing soccer
- You can run more.
- You can get more air.
- Playing tag
- Playing football
- The little park area
- The sandpit to jump in
- Playing four square
- Swinging
- The rocks
- Birds
- Trees
- Running – because it helps you get more healthy
- Grass
- Woodchips to fall on

- The clouds
- Playing basketball
- The playground
- A chance to connect with nature – learn more about it because you are in it
- Being out in the fresh air – not cooped up in the classroom
- Getting involved, doing it for real, not just reading about something in a book
- Exploring the prairie
- Learning at the same time we are getting rid of excess energy
- More fun than being inside
- Recess
- Games
- Racing lanes
- Sledding hill
- 4-Square
- basketball hoops outdoor classroom
- gardens
- kickball
- there is a lot of space for running
- the big field
- the huge field
- the giant field for running, soccer, and football
- I like that we have wide open space.
- Being able to run
- The fresh air
- The big field – lots of space for running
- Playing with friends
- Being in nature
- It's nice when it's not cold.
- The imagination zone
- Four square
- All of the space
- Lots of open space
- The field
- The birds, flowers, butterflies, air, and nature
- Sitting in the grass and having a picnic
- Butterflies
- The sun
- Playing in the grass
- Playing with friends
- It is so beautiful.
- Playing because I can enjoy hide-and-seek
- Playing with my friends
- Having adventures
- Space for games
- No work
- Playing freely
- Breeze and grass
- It calms the nerves.
- Relaxing
- Feeling the sun on your face
- Getting your vitamin D
- When it's warmer, you're happier.
- Enjoying the snow
- Enjoying how the trees change
- Looking at nature helps you think about life
- Catching some zzz's
- Looking at the clouds' shapes
- Fresh air
- Playing outside
- Seeing new stuff
- Being with friends
- Walking and exercising
- Being playful and rambunctious
- Having fun
- Life is good.
- Seeing nature
- Pretending to fly
- Seeing all the animals
- Hanging out with friends
- Laying on the hill and feeling the breeze

- Lots of open space
- Enjoying wildlife: birds, frogs, cranes, insects, butterflies
- In general, everything is better
- Lots of places to run
- Play tag – play outdoor games
- Picking up garbage
- Find worms, animal tracks, caterpillars
- Pick dandelions
- Find cool rocks
- Playing soccer
- Blacktop (playing basketball)
- Grass
- Looking at insects
- Playing tag
- Hanging out
- Playing with our buddies (Kindergarten class)
- Lots of open space
- Walking around
- Swinging

What don't you like about being outside?

- I trip on sticks.
- Mosquito bites
- I like everything – that's a hard question.
- Being sweaty
- Too sunny and hot
- Sometimes the weather
- Insects
- Noise – all the kids
- People get hurt
- Friend issues/bullies
- Mud – can't play I field due to poor drainage
- Sometimes icy conditions
- Big rocks in the way
- Mud
- Spider webs getting in my mouth
- Snow cold
- Bugs (mosquitoes, bees)
- Grass is itchy
- When the weather is yucky (like lion days)
- Stepping in the mud falling on the rocks
- Getting rocks in your shoes
- Falling on the cement
- Not enough places to sit down
- The mud around the school
- There should be more grass.
- It is cold.
- It is muddy.
- Don't want to touch things
- Hard to hear teacher
- Rocks
- When it is cold or raining or snowing outside
- When it's too hot and when it's really cold
- Mud
- Sometimes we hate to play on the blacktop.
- The screaming outside
- People following me
- When it's raining
- People are mean sometimes.
- Mud
- Playing football with mean friends
- In winter, it's too cold.
- Sometimes it's really muddy.
- When it's cold
- When there is so much snow my nose turns red
- Bees
- Falling off the swings
- Fireflies
- Quicksand
- Mosquitoes
- Rain
- Meat eaters

- Getting hit by a ball
- Broken glass
- Cigarettes
- Falling off my bike
- Allergies
- Smoke
- I don't like shoveling snow.
- Rocks
- Temperature (too hot or too cold)
- Bad weather (misty, rainy, too humid)
- When bees and insects bother or bite us
- Limiting to what we can do
- When safety issues get in the way
- Sunburn/brightness of the sun
- Thistles or thorny plants
- Ant hills, worms – YUK!
- Too short of time outside
- Bad weather
- Bugs
- I don't dislike anything.
- Everyone else insists that all the open space be used for football and soccer only.
- That we only have tire swings
- We only get to use part of the field.
- I would like more grass in the few areas where there isn't any.
- Not much to do
- I get too tired.
- No swings
- The soccer games
- Soccer/football field
- Balls need to be blown up.
- It is cold outside.
- I don't like monkey bars.
- I want an ocean.
- The woods
- Going on the hill
- Trees
- Too many bugs dumping on me
- Mosquitoes
- Bees and ants
- Gnats
- Dragonflies
- Spiders
- Getting dirty
- Puddles
- Ladybugs that bite
- Mud, dirt, and rocks
- Flies
- Falling
- Sunburns
- Trees
- Rocks
- Flies
- Trash makes people sad.
- Broken trees
- Forced out when it's too cold
- Bugs crawl on you
- Seeing dead animals from global warming
- Sometimes looking at nature makes you think about bad things like pollution.
- People disturb the ecosystems like in Wump World.
- Seeing trash in the snow when you dig
- Not having a choice about going out or staying in at recesses
- Snow is polluted.
- Not seeing plants or many animals
- COLD! (no warm places
- Wet and muddy
- Cold
- Snowy
- Soccer goals are very far away
- Not having friends out at same time
- Short time (just start having fun)
- Cussing, disturbing violence, disgusting actions
- Garden

What do you really like about your schoolyard (not including play equipment)?

- Lots of animals near flowers
- Lots of bugs so we can catch them and look at them
- The front – it looks pretty to me – all the flowers
- In the front we can go have lunch outside and sit where you want
- New flowers are growing and a bunch of wind is blowing
- Birds
- Run down the hills
- Sledding on the hills
- Trees
- Huge playground/space
- See the outside world
- Birds
- Games – basketball, 4 square
- Lots of space
- Lots of trees
- The woods
- Lots of nature
- Sand box
- Hills for sledding, rolling down, and running up
- Grass to run around and play soccer on
- School garden – it's beautiful
- Lots of space to run
- Trees – give shade, trees look good
- Picking dandelions
- Play running games – it's big
- The grass and nature
- I like to see the trees when it is nice outside.
- The trees
- Snowshoeing in the winter
- Fields for running and games
- The school garden
- The garden
- The garden and the big hill
- Chilling and resting
- I like the yard and I like the flowers or the garden.
- The hill to run and play
- Playing sports
- I like the garden, trees, and the field of grass.
- The hill
- The hill
- When the birds sing they make beautiful sounds.
- The fresh air
- There is green fresh grass.
- There are lots of trees and plants.
- I like our garden
- There is no garbage in our schoolyard.
- I can hear a chickadee.
- It is big.
- It is beautiful.
- It's a big square.
- Nobody steals our balls.
- I like the property.
- There is black stuff around the edge of the schoolyard.
- Prairie
- Wooded area – wish we could go there more often
- Visual beauty
- Hills for sledding
- Outdoor classroom
- Gardens/flowers (butterfly garden)
- Attached to the park
- Stone courtyard – wish we could go out in it
- That it is clean
- Garden
- Flowers
- Green grass
- Hill

- Tables
- Benches
- Outdoor classroom
- The field
- The open space is beautiful and green.
- Great place for running
- The field
- The field
- It's grass, not dirt
- The variety of things you can do
- The shade near the back fence
- I like the grass.
- We have lots of room for different things.
- All the space
- The grass is good for running.
- The flowers
- The butterflies and the animals
- Nature
- I like the grassy area. I like to lay on the grass.
- I like the sun.
- No cement
- It's big.
- It has two hills.
- When it rains a lot, there is a little river.
- It feels like we're in a bowl.
- In the summer and fall it's pretty
- When it's foggy out, I can imagine stuff
- When we had flowers a couple years ago
- Butterflies
- Flowers
- Trees
- Tree sap
- Pine trees
- Bugs
- Old trees
- Orange, yellow, white, and green leaves
- Garden
- Thorny bushes
- Dead mouse
- A garden with a path
- Tree stump with a big hole
- A field
- Leaves
- Rocks
- Nature
- Hotel for birds
- Dollar leaves
- White trees
- Size of the schoolyard and freedom to play (and the natury smell)
- Places to run – big
- The prairie
- Blacktop garden
- Seeing new things

If you could change your schoolyard to make it even better, what would you do (not including play equipment)?

- Add benches so people can get low to the ground without sitting on the ground
- Something to make blacktop softer
- Add space for pet bugs
- More tables to sit at and learn
- More trees
- Add more flowers and plants
- Add tree house
- Less mud/ice
- Forest area
- Water area
- Snow machine
- Plant more trees
- Plant flowers
- Ask kids to not climb on the trees or pick the tree bark

- Plant a garden
- Protect nature
- Make bird houses
- Put out bird feeders
- Build animal homes
- Don't scare the animals
- Flowers
- Benches to sit on
- Longer grass (so we can hide)
- More trees
- Play in the woods (We are not allowed in the woods during recess.)
- Get more time on our schoolyard
- Make a bigger garden
- Make more gardens and plant flowers
- More fields, flowers, and gardens
- No rocks
- Take rocks away
- Take the rocks off and have flowers
- Take away rocks
- I would make the schoolyard even bigger.
- Make the garden better
- Make the garden larger
- Grow more trees
- Take the rocks away
- Make the hill higher
- Add more trees
- Make more grassy areas
- Make the garden bigger
- More flowers
- I'd have apple trees.
- More Maple trees
- More leaves on the trees
- I want a blueberry tree.
- I would make half of the yard water and put fish in it.
- More butterflies
- Cherry trees
- We should plant more grass.
- I'd like a tunnel.
- More birds in the nests
- More ducks and geese
- We could put ice on the field and we could skate on the ice.
- More opportunities to use the outside for learning
- Be able to use the courtyard
- More gardens (rain, veggie, fruit bushes, and trees)
- Increase the size and diversity of usable outdoor areas
- Build a pond on site
- Add bird houses and bat houses
- Rain barrels
- Roof top garden
- Greenhouses
- Use city prairie and park more often
- Berry bushes
- More picnic tables
- No cracks in the blacktop
- More grass and trees (to climb)
- Bigger playing field
- Add more grass and adult trees
- Bigger trees and more flowers
- Make a bigger and better field
- In the front of the school, I would put in new grass.
- Have the snow plow dig it out in the wintertime
- I would expand the field.
- I would plant more flowers.
- Plant more trees
- Make more shade outside
- More seating
- Not put seating behind the soccer net
- Plant more flowers
- Pick up the trash
- A water fountain
- More flowers
- Put in a water fountain
- Add flowers
- Long grass to hide in

- Make middle schoolers stop throwing trash around (more discipline)
- Picnic tables
- Clean up area every week
- Gardens
- Bird houses (build in art using recyclable items)
- More flowers, plant flowers
- Plant more trees
- Plant things in recyclable pots
- Make a gate around things we plant
- Expand the prairie
- Make a duck pond
- Plant a vegetable garden
- Flowers
- Animals
- Plant more trees with sap
- Waterfall
- More grass
- More mud
- Have sand
- Have a pond with frogs and fish
- Have fruit growing
- A lake or stream
- More tulips
- A tree house
- A bird bath
- Bird houses
- Bird feeders
- Big rocks and logs
- More trees
- More grass (Better grass and taken care of)
- Plant a new tree to replace the Allis Oak
- Grow flowers and vegetables in the gardens
- Grow lots and lots of flowers
- Make a pool
- Put stuff out so animals will come to the playground.
- More soccer and football fields
- Make the schoolyard bigger.
- More sit-down places
- Tree houses